PB89-209829

Superfund Record of Decision (EPA Region 4): Independent Nail, Beaufort, Beaufort County, South Carolina (Second Remedial Action), August 1988

(U.S.) Environmental Protection Agency, Washington, DC

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August 1988

PB89-209829

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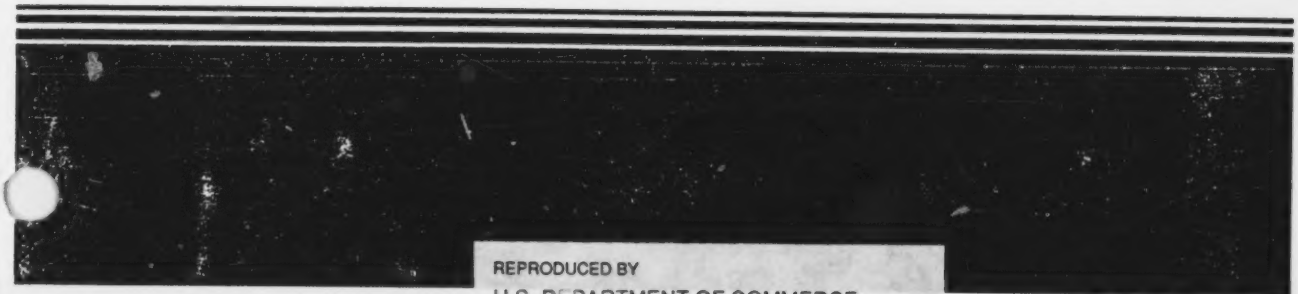
Superfund Record of Decision:

INDEPENDENT NAIL, S.C.



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15. Supplementary Notes

16. Abstract (Limit: 200 words)

The Independent Nail site, occupying 24.6 acres, is located near the town of Beaufort, South Carolina. The site is surrounded by fields, woodlands, and wetlands. The United States Fish and Wildlife Service in 1987 indicated that endangered and threatened species may exist in the area of influence of the site, however, these species have not been confirmed to be inhabiting areas that may be impacted by the erations at the site. An estimated 25 residents live within one quarter mile of the te. The Black & Johnson Company, previous owners of the site, manufactured metallic screws and fasteners. As part of the manufacturing process, the company discharged approximately 33,000 gallons per day of plating wastewater into an unlined infiltration lagoon. The discharge rate may have been as high as 75,000 gallons per day. The lagoon was in use from approximately 1969 to 1980. The South Carolina Department of Health and Environmental Control reported that wastewater contained some organic cleaning solvents and metals. In April 1980, the Black & Johnson Company ceased operation. Two months later, the Independent Nail Company purchased the plant and currently operates a panneling nail coating process, but does not discharge wastewater to the lagoon. The first remedial action at this site at this site addressed the contaminants in the soil and lagoon sediments. This remedial action at this site addresses ground water contamination. The primary contaminants of concern include chromium, zinc and cyanide. (See Attached Sheet)

17. Document Analysis a. Descriptors

Record of Decision
Independent Nail, SC
Second Remedial Action - Final
Contaminated Media: gw
Key Contaminants: metals (chromium, iron, lead, mercury)

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

Availability Statement	19. Security Class (This Report) None	21. No. of Pages 69
	20. Security Class (This Page) None	22. Price

(See ANSI-Z39.18) See Instructions on Reverse OPTIONAL FORM 272 (4-77) (Formerly NTIS-35) Department of Commerce

V/ROD/R04-88/040
Dependent Nail, SC
Second Remedial Action - Final

16. ABSTRACT (continued)

The selected remedial action for this site addressing ground water is a no action remedy. The source control remedial action conducted at the site was determined to have little or no impact on ground water quality in the area of the site. This remedial action has no costs associated with it.

DECLARATION FOR THE RECORD OF DECISION
REMEDIAL ALTERNATIVE SELECTION

Site Independent Nail Company
Beaufort, Beaufort County, South Carolina

Statement of Purpose
This decision document presents the selected remedial action for this Site developed in accordance with CERCLA as amended by SARA, and to the extent practicable, the National Contingency Plan.

Statement of Basis
This decision is based upon the administrative record for the Independent Nail Company Site. The attached index identifies the items which comprise the administrative record upon which the selection of a remedial action is based.

Description of Selected Remedy:

Operable Unit Two for this site addresses groundwater. The remedial investigation and endangerment assessment support a no action alternative for groundwater.

* No Action

Operable Unit One for this site was a source control measure. The Record of Decision for Operable Unit One was signed September 28, 1987, and the remedial action of solidification/stabilization was conducted in April and May of this year.

Declaration

The selected remedy is protective of human health and the environment, attains Federal and State requirements that are applicable or relevant and appropriate, and is cost-effective. The statuatory preference for treatment is not satisfied because treatment was found to be unnecessary. Contaminant levels in groundwater were determined to present no imminent or substantial threat to human health or the environment; therefore, no treatment is necessary.

Lee A. Direlus III, for 30 AUG 88

Greer C. Tidwell
Regional Administrator

Date

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

INDEPENDENT NAIL COMPANY SITE

BEAUFORT COUNTY, SOUTH CAROLINA

Prepared By:

U.S. Environmental Protection Agency
Region IV
Atlanta, Georgia

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RECORD OF DECISION
SUMMARY OF REMEDIAL ALTERNATIVE SELECTION
INDEPENDENT NAIL COMPANY SITE
BEAUFORT COUNTY, SOUTH CAROLINA

1.0 Introduction

The Independent Nail Company Site was added to the National Priorities List (NPL) in September 1984. The Independent Nail Company Site has been the subject of a remedial investigation (RI) and feasibility study (FS) performed by the Region IV REM II Contractor, Camp, Dresser & McKee, Inc. (CDM). The Operable Unit 2 RI Report, which examines possible groundwater contamination at the site, was issued June 20, 1988. The FS, which normally develops and examines alternatives for remediation of the site, will not be performed at this site due to the results of the RI and endangerment assessment.

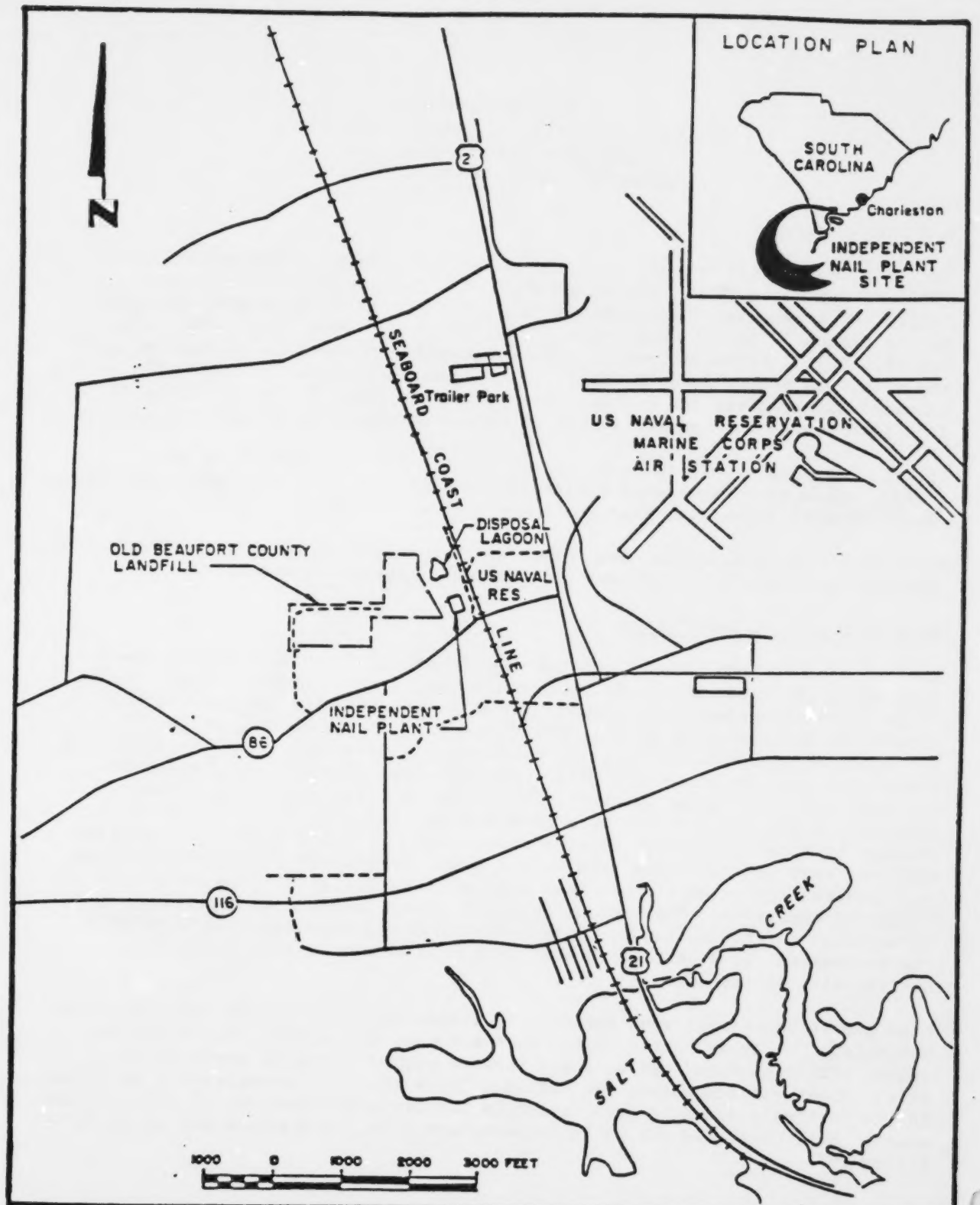
The first Operable Unit remedial action consisted of solidification and stabilization of contaminated soils/sediments at the Site, then returning them to the on-site lagoon two feet above the high water table.

This Record of Decision has been prepared to summarize the remedial alternative selection process and to present the selected remedial alternative.

Site Location and Description

The Independent Nail Site is located near Beaufort, South Carolina on South Carolina State Route 86, 3,200 feet west of Highway 21 (Figure 1-1 and Figure 1-2). The Independent Nail Company property occupies 24.6 acres. The site is located at latitude N 32 degrees 80'00" and longitude W 80 degrees 44'30" and at N-230,750, E-2,079,500 based on the South Carolina Coordinate System, South Zone. The area is rural with some light industry. Several residences are located near the site on South Carolina Route 86. The old Beaufort County Landfill is located near the site to the west. The U.S. Marine Corps Air Station is located east of the site across Highway 21. A Seaboard Coast Line Railroad spur parallels the site to the east. Kalama Specialty Chemicals was once located approximately one half mile north of the site. The company is no longer in operation. The town of Beaufort, South Carolina is approximately three miles to the southeast. Savannah, Georgia is approximately 40 miles to the southwest. It is estimated that less than 25 people live within one quarter mile of the site.

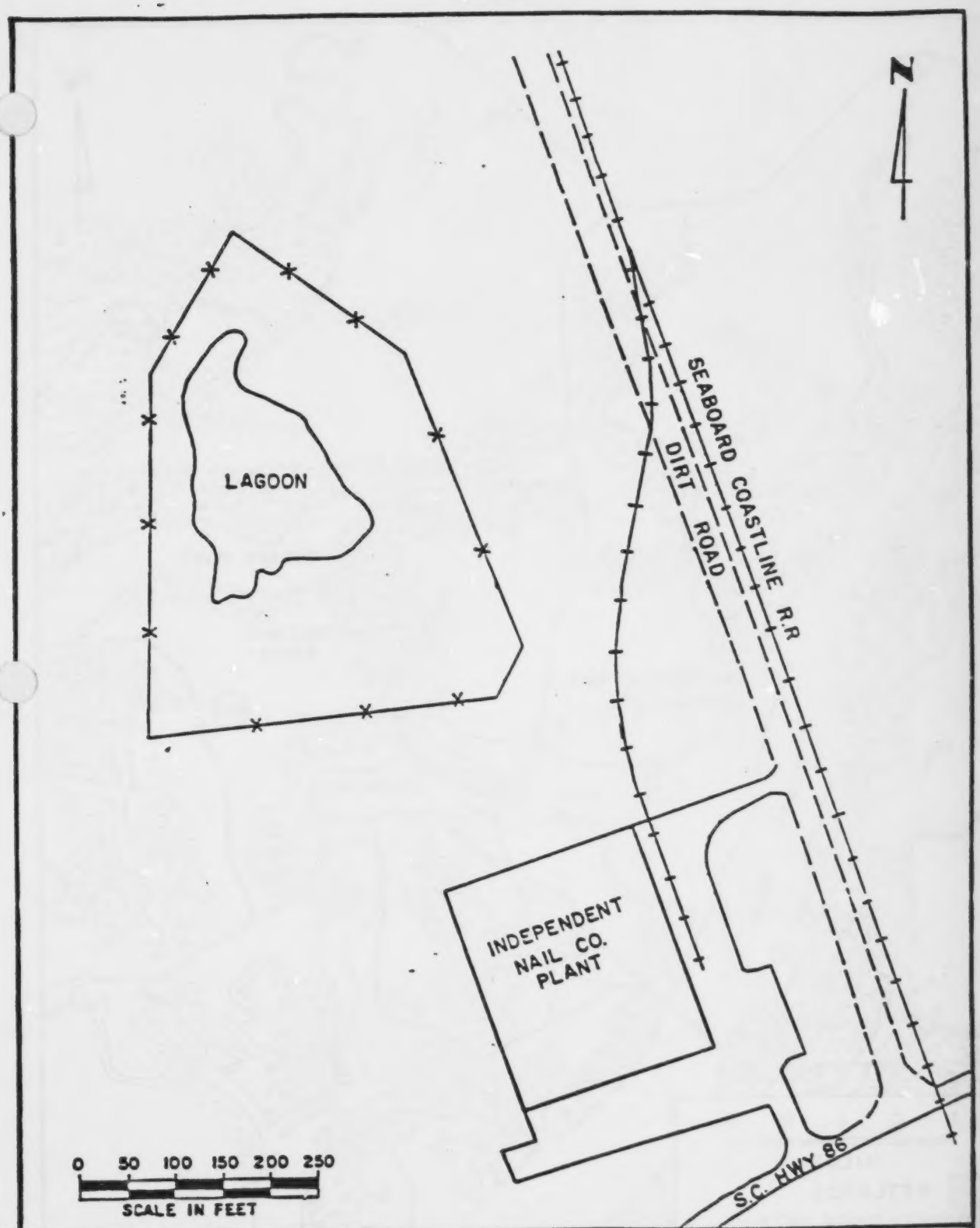
Land use in the vicinity of the site is a combination of fields, woodlands and wetlands. The areas to the north, east and west are wooded. Major surface waters with associated wetlands are located within 1.5 miles south of the site. Other surface waters are Mulligan Creek which is approximately two miles to the northeast and Salt Creek which is located approximately 1.5 miles to the south. Salt Creek may not be in the drainage path. A drainage map is shown on Figure 1-3.



LOCATION PLAN

INDEPENDENT NAIL CO. SITE
BEAUFORT, S. CAROLINA

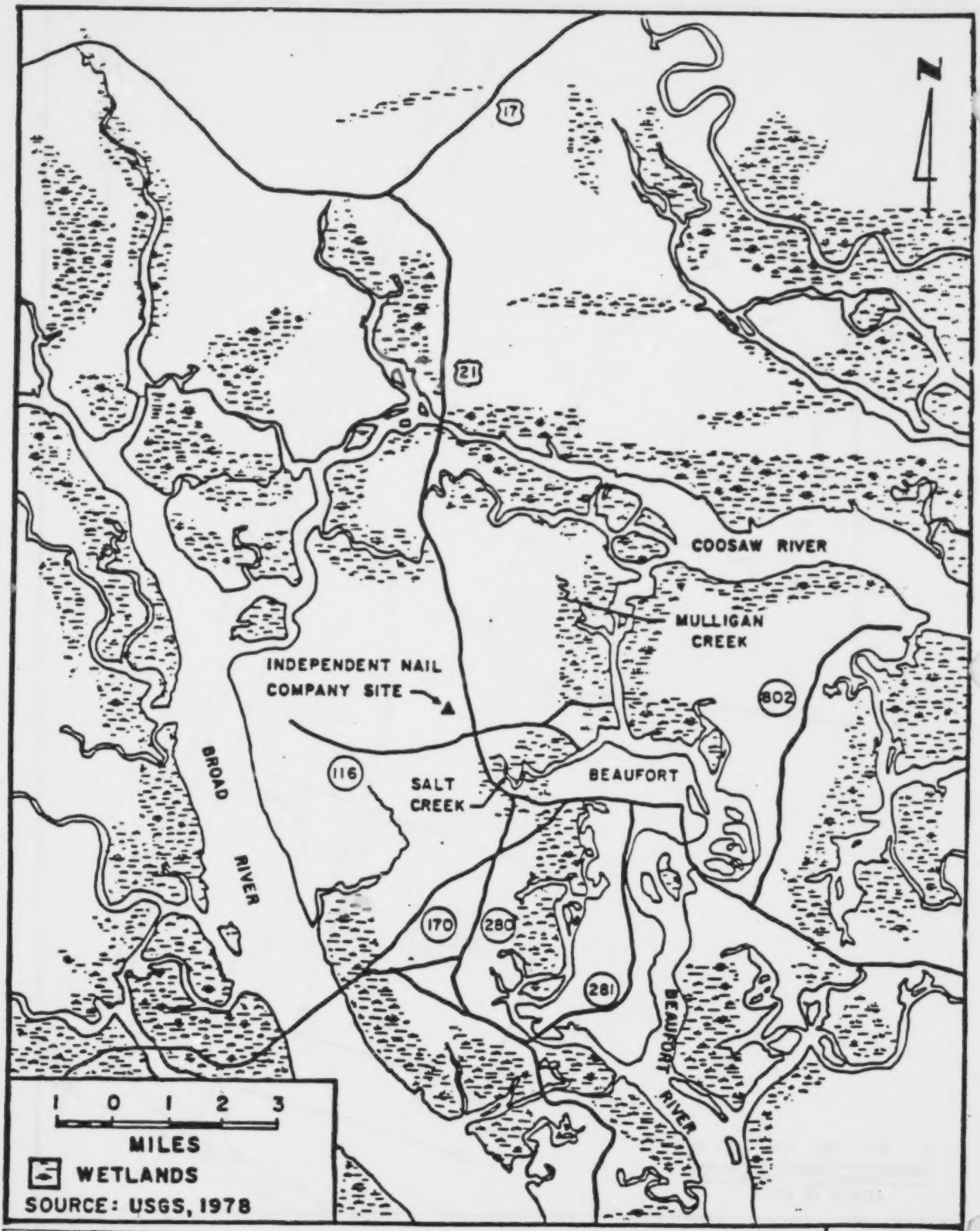
FIGURE NO.
1-1



AREA MAP

INDEPENDENT NAIL CO. SITE
BEAUFORT, S. CAROLINA

FIGURE NO.
1-2



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DRAINAGE MAP

INDEPENDENT NAIL CO. SITE
BEAUFORT, S. CAROLINA

FIGURE NO.
1-3

Single family residences are located south of the site along South Carolina Route 86. The largest residential development in the area is the Laurel Bay Naval Housing Area located approximately three miles to the west.

Small commercial areas are located north and south along Route 21 in the vicinity of the towns of Grays Hill and Burton, respectively. Several small industries are also located around the area. Other local natural resources include sand and gravel pits and agricultural land scattered throughout the area.

The U.S. Fish and Wildlife Service (1987) indicated that endangered and threatened species may occur in the area of influence of the Independent Nail Company Site. These species are the West Indian manatee, bald eagle, wood stork and Arctic peregrin falcon (endangered) and the American alligator (threatened). However, these species have not been confirmed to be habitating areas that may be impacted by the site.

The lagoon is presently inactive and is surrounded by a fence. Rain water collects in the lagoon. The topography of the site is such that precipitation which may come in contact with contaminants does not run off. The water level in the lagoon varies at different times of the year depending on the level of the groundwater table. The Independent Nail Company plant is directly south of the lagoon.

Groundwater is an important source of water supply in the site vicinity for private, municipal and commercial use. However, many wells are used only at times of peak water demand and as backup wells. The Burton Well Field, approximately 2.5 miles southeast of the site, is used to handle peak demand from May through September in combination with Savannah River water. The Marine Corps Air Station, located east of the site, and the Laurel Bay Naval Housing Area to the west, rely on wells placed in the deep Floridan Aquifer as a backup water supply. Because these wells are deep and the groundwater flow through the site is parallel to the air station and housing area, it is unlikely that these populations would be at risk from any contamination emanating from the site. Private homes immediately south of the site are connected to the municipal water supply, however several have private wells that are likely used for lawn and garden watering. These wells may be screened in the water table aquifer. Several industries in the local area also use well water for their process waters.

The topography of Beaufort County consists of nearly level lowland and low ridges that have slopes of less than 2 percent. The area surrounding Independent Nail Company Site is at an elevation of approximately 40 feet, which is the high point of the area (US Geological Survey, 1979). The on-site land surface slopes from approximately 38 to 40 feet above mean sea level at the fence surrounding the lagoon to less than 30 feet at the center of the lagoon. A topographic map of the Independent Nail Company Site is presented as Figure 1-4. Figure 1-5 shows the topography for the general area based on the US Geological Survey map for the area.

2.0 Site History

PERMIT AND REGULATORY HISTORY

The Blake and Johnson Company (previous owners of the site) manufactured metallic screws and fasteners. As part of the manufacturing process, the company discharged approximately 33,000 gallons per day of plating wastewater into an unlined infiltration lagoon (EPA, 1983). The discharge may have been as high as approximately 75,000 gallons per day (South Carolina State Board of Health and Pollution Control Authority, 1968). The lagoon was in use from approximately 1969 to 1980. The South Carolina Department of Health and Environmental Control (SCDHEC) reported that the wastewater contained some organic cleaning solvents, phosphate, cyanide, chromium, cadmium, lead, mercury, nickel, zinc, copper and iron. In April 1980, the Blake and Johnson Company ceased operation. Two months later, the Independent Nail Company purchased the plant. The Independent Nail Company currently operates a panelling nail coating process at the plant, but does not discharge any wastewater to the lagoon.

A study done by SCDHEC from May 21 to 23, 1975 revealed that a break in the side of the lagoon may have allowed wastewater from the lagoon to enter a drainage ditch located north of the lagoon. Analysis of a sample collected from this ditch in August 1975 showed cadmium and chromium contamination. The break and resulting discharge appear to have been a single, short-term incident.

Beginning in August 1975, the state of South Carolina and a local engineering firm (Davis and Floyd) conducted several groundwater investigations. Monitor wells were placed into the water table aquifer at various locations near the lagoon. The results of these sampling efforts indicated that the quality of the groundwater was being affected by the wastes discharged to the lagoon. Chromium, lead, iron, and mercury concentrations were found in excess of applicable drinking water standards in some of these water samples.

Sampling performed on April 21, 1980 indicated that concentrations of chromium and lead in the groundwater exceeded drinking water standards. The chromium level in one well was 0.210 mg/l and the lead concentration in another was 0.150 mg/l. A second sampling of the same wells in May 1980 found chromium levels in two wells exceeding federal drinking water standards. Lead concentrations were all below the federal drinking water standard. The federal drinking water standard (Maximum Contaminant Level) for both of these metals is 0.05 mg/l. Later in May 1980, SCDHEC requested that three intermediate depth (40 to 50 feet) wells be installed for monitoring. Chromium levels in all three of these wells exceeded federal drinking water standards when sampled in June 1980. However, sampling of these wells by REM II personnel in August 1985 showed no metal contamination above federal drinking water standards, based on local laboratory analytical data.

On June 11, 1980, the Industrial and Agricultural Wastewater Division of SCDHEC sent a letter to Blake and Johnson stating that groundwater at the facility contained "chromium at approximately the concentration of the drinking water

standard". Based on this information, there is little likelihood of finding serious contamination of groundwater". The following day, a letter was sent by SCDHEC to Independent Nail relating "we have recently completed evaluation of groundwater at Blake and Johnson with favorable results".

EPA became involved with the site on February 26, 1981 with the preparation of a Potential Hazardous Waste Site Investigation Report and Preliminary Assessment Report. In April 1981, a site inspection was undertaken, and as a result, a Final Strategy Determination (May 18, 1981) stated that "no action [was] needed" at the site. On November 6, 1981, a SCDHEC interagency memo from the Groundwater Protection Division stated the seriousness of land disposal practices in the vicinity of the site due to its location in a major recharge zone. The memo also stated that the previous SCDHEC letters of June 11 and 12, 1980 were "not consistent with our assessment of the situation".

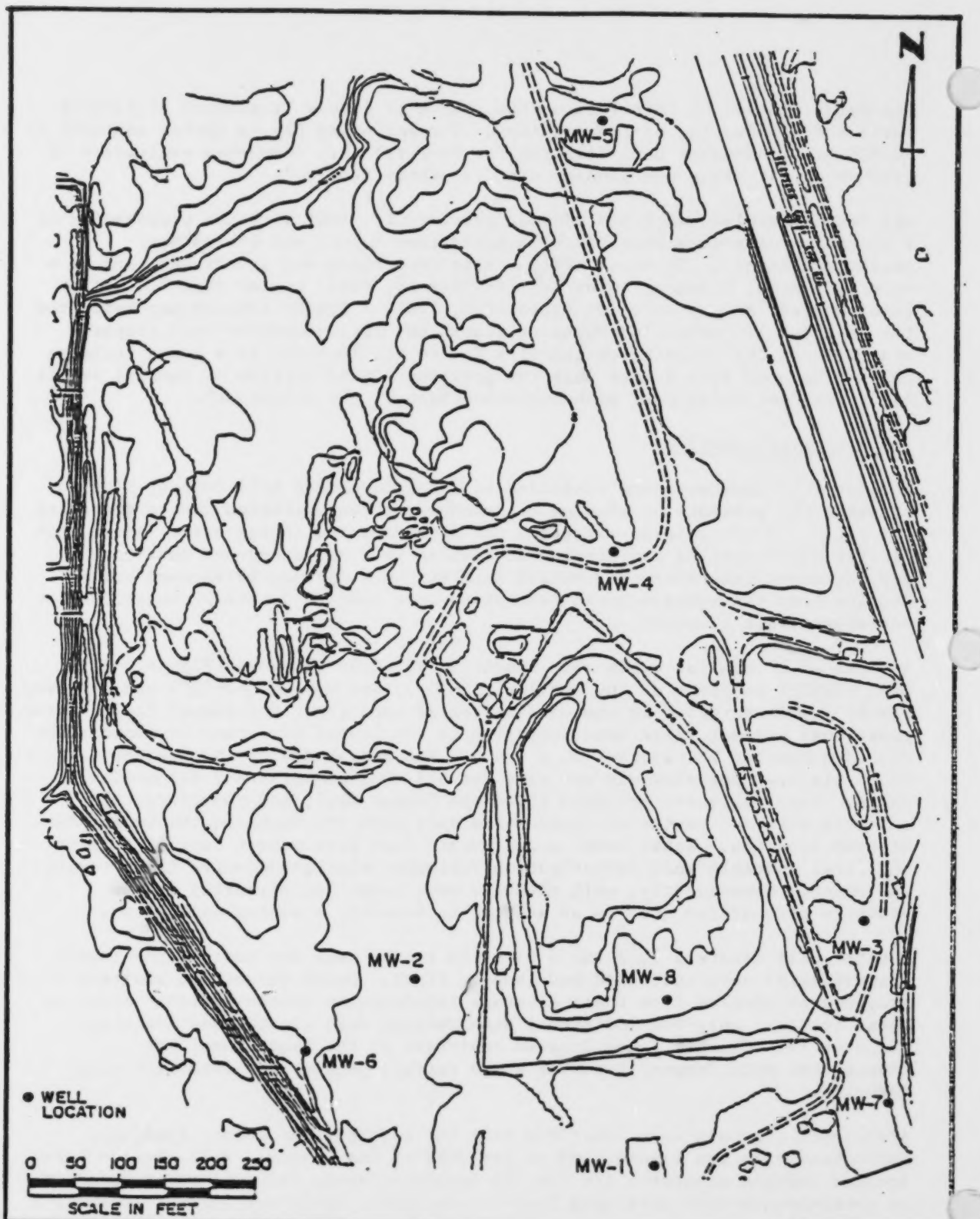
3.0 Analytical Results

Monitor well clusters were installed at the Independent Nail Company Site to document the presence or absence of groundwater contamination and to determine the extent of contaminant migration (if any) from the lagoon area. After each cluster was installed and developed, samples were collected and sent to a subcontracted laboratory for metals analysis on a 48-hour turnaround basis. Results from the subcontracted laboratory were used to determine locations for subsequent well clusters.

A total of 27 monitor wells were installed in eight clusters (Figure 3-1). Each cluster consists of one shallow (20-30'), one medium (45-55') and one deep (69-82') well screened in the unconsolidated sand above the Cooper Marl. Three additional bedrock wells were installed in the Santee Limestone to monitor the Floridan Aquifer at clusters 5, 6 and 8. The elevations of the screened intervals are approximately the same for all shallow wells and all medium wells. Deep wells are screened above the Cooper Marl, and therefore, the screened interval depths of these wells vary with the depth to the Cooper Marl at each location. Water level measurements from piezometers installed during the first operable unit investigation indicated that groundwater flows toward the south. Consequently, well clusters were installed primarily in the southern part of the site in an attempt to identify a contaminant plume.

Monitor well clusters 1, 2 and 3 (located south, west and east of the lagoon, respectively) were installed and sampled first. Quick turnaround analysis of groundwater samples from these clusters indicated no contamination. Based on these results, only one additional downgradient well cluster was installed (Cluster 7). Cluster 7 was located southeast of the lagoon near the Independent Nail Company building where certain geophysical anomalies were detected.

Additional clusters were installed near the old Beaufort County landfill, upgradient from the lagoon, and in the area of the lagoon. Well cluster 6 was located between cluster 2 and the old Beaufort County landfill to ensure that no contaminants were migrating from the landfill toward the lagoon. Cluster 4 was installed to monitor groundwater north of the lagoon. Cluster 5 is located at an upgradient location approximately 500 feet north of the lagoon, and provides background soil and groundwater quality information. Cluster 8 was



REM II
MONITOR WELLS CLUSTER LOCATIONS

INDEPENDENT NAIL CO. SITE
BEAUFORT, S. CAROLINA

FIGURE NO.
3-1

installed inside the fence, in the southern part of the former lagoon to monitor the area where contaminated water had been discharged.

Groundwater samples were collected from each monitor well for metals and cyanide analyses by CLP laboratories. The results of these analyses are shown in Table 3-1. Detection limits reported by the CLP laboratories varied slightly from sample to sample. The detection limits shown in Table 3-1 are the highest reported for each chemical from all of the samples. Actual detection limits may be somewhat lower than those shown.

Monitoring wells MW-1S and MW-1M were sampled for target compound list (TCL) organic compounds. Napthalene was detected in MW-1S at a concentration of 5 ug/l and was the only TCL organic compound detected in either sample.

The CLP groundwater data shown in Table 3-1 indicate that cyanide and many of the TCL metals were detected at very low concentrations in some of the wells. The data was compared to background concentrations found in monitor well cluster 5. Because most metals were undetected in the background wells, the detection limits were selected to represent background conditions. Most detections were at concentrations that were just above the detection limit and were considered to approximate background conditions.

Detections that were elevated compared to background were arsenic and chromium in MW-1S; mercury in MS-3S, MW-3M, MW-3D, MW-6S, MW-6M, and MW-6D; and cyanide in MW-6D. When compared to the Safe Drinking Water Act MCLs, only chromium and mercury exceeded standards.

Chromium was detected just over the MCL of 0.050 mg/l at 0.058 mg/l in MW-1S. Chromium contamination in MW-1S may be a result of wastewater disposal to the lagoon because chromium is a known contaminant of the soil in the lagoon area, and monitor well MW-1S is approximately 150 feet downgradient of the lagoon.

Mercury was detected at concentrations ranging from 0.0014 mg/l to 0.0034 mg/l in monitor wells MW-3S, MW-3M, MW-3D and MW-6S. The MCL for mercury is 0.0002 mg/l. Mercury was not detected in groundwater samples from wells located in the lagoon (cluster 8) or immediately downgradient of the lagoon (clusters 1 and 2) and was not detected in soil from the lagoon area. In addition, all mercury detections carry the data qualifier "N". This qualifier identifies that there is an indication that mercury was present, however, the quality control requirements necessary for confirmation were not met. The "N" signifies that mercury was only tentatively identified in these samples.

4.0 Endangerment Assessment

Data obtained from upgradient well MW-5 is considered to be representative of background concentrations of inorganic chemicals in the groundwater. These data are shown in Table 3.1 together with the results of the CLP analyses of groundwater from the other wells sampled during the investigation.

As has been noted above, the data in Table 3.1 shows that most chemicals detected were at concentrations close to detection limits. Mercury was tentatively identified at low concentrations in one set of samples (MW 6). However, this chemical, which was not detected in soils at the site during the

CLP GROUND WATER RESULTS
INDEPENDENT NAIL COMPANY SITE
BEAUFORT, SOUTH CAROLINA
REM II

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TABLE 3-1

WELL NO.	CN	Sb	As	Be	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Tl	Zn
MW-1S	U#	U	.032JN	U	U	.058	.011	U	U	.018	U	U	U	U
M	U#	U	U	U	U	.005	U	.001J	U	U	U	U	U	U
D	U#	U	.006JN	U	U	.005	U	U	U	U	U	U	U	U
MW-2S	.02J#	U	U	U	U	U	U	U	U	U	U	U	U	U
M	U#	U	U	U	U	U	U	U	U	U	U	U	U	U
D	U#	U	.005JN	U	U	U	U	U	U	U	U	U	U	U
MW-3S	.02	U	U	U	U	U	U	.004J	.003JN	U	U	U	U	.057
M	U	U	U	U	U	U	U	.005J	.0014JN	U	U	U	U	.098
D	U	U	U	U	U	U	U	.004J	.003JN	U	U	U	U	.054
MW-4S	U#	U	U	U	U	.007	U	U	U	U	UR	U	U	U
M	U#	U	U	U	U	U	U	U	U	U	UR	U	U	U
D	U#	U	U	U	U	U	U	U	U	U	UR	U	U	U
MW-5S	U#	U	U	U	U	U	U	U	U	U	UR	U	U	U
M	U#	U	U	U	U	U	U	U	.00026JN	U	UR	U	U	U
D	U#	U	U	U	U	U	U	U	U	U	UR	U	U	U
F	U#	U	U	U	U	U	U	U	U	U	U	U	U	.051
MW-	U	U	U	U	U	U	U	U	.0034JN	U	U	U	U	.048
M	U	U	U	U	U	U	U	U	.0002JN	U	U	U	U	.061
D	.11	U	U	U	U	U	U	U	.00022JN	U	U	U	U	.058
F	U#	U	U	U	U	U	U	U	U	U	UR	U	U	U
MW-7S	U#	U	.012JN	U	U	U	U	U	U	U	UR	U	U	U
M	U#	U	U	U	U	U	U	U	U	U	UR	U	U	U
D	U#	U	U	U	U	.007	U	U	U	U	UR	U	U	U
MW-8S	U#	U	U	U	U	.008	U	.002	U	.007	U	U	U	.037
M	.03J#	U	U	U	.005	.005	U	U	U	U	U	U	U	.075
D	U#	U	.010	U	U	U	U	U	U	U	U	U	U	.043
F	U#	U	U	U	U	U	U	.002	U	U	U	U	U	.042
DETECTION LIMIT	<0.01	<0.031	<0.010	<0.003	<0.005	<0.006	<0.009	<0.007	<0.0002	<0.011	<0.005	<0.005	<0.010	<0.070

All concentrations are mg/l
U = undetected
J = estimated value
N = presumptive evidence of presence of material
R = QC indicates that data is unusable
# = exceeded laboratory holding time

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first operable unit investigation, is thought to be an artifact of the sampling and laboratory procedures and, therefore, will not be considered further.

Chromium was detected in at least one well, MW-1S, at a concentration elevated above background (58 ug/l) and, therefore is selected for evaluation. The concentration of chromium detected in well MW-7D (7 ug/l) may be less than or at background since it was not detected in the background well at detection limits of 6 to 7 ug/l.

Cyanide was detected in wells MW-2, 3, 6 and 8. The detected concentrations of 20 ug/l in wells MW-2, 3, and 8 were above background as cyanide was not detected in MW-5 at a detection limit of 10 ug/l. Concentrations in MW-6D had a concentration of 110 ug/l. Therefore, cyanide is selected for evaluation.

Zinc was detected in wells MW 3, 6, and 8 at concentrations ranging from 37 to 98 ug/l. Zinc was not detected (at a detection limit of 70 ug/l) in wells of the background well cluster. Since zinc is present at concentrations slightly above background in three downgradient wells, it is selected for evaluation.

Of the other chemicals detected, arsenic and lead were detected in all wells at concentrations near or below detection limits (detection limits were 7 to 10 ug/l for arsenic and 5 to 7 ug/l for lead). Based on the above, and the fact that these inorganic compounds/elements were not elevated above background in soils at the site, these metals in groundwater are not considered to be related to operations at the site and will not be considered further. In addition, cadmium and nickel, metals which were detected at elevated concentrations in site soils, were detected in groundwater only once or twice at concentrations at or below detection limits. Due to this low frequency of detection and low concentrations, these chemicals are unlikely to contribute to potential exposures and associated risk, and therefore, will not be considered in this assessment.

In summary, chromium, cyanide and zinc are selected as indicator contaminants of potential concern in groundwater for the Independent Nail Company site.

4.1 PHYSICAL AND CHEMICAL PROPERTIES OF THE CHEMICALS OF POTENTIAL CONCERN

The physical and chemical properties of the chemicals of potential concern in groundwater are important factors in determining the environmental transport and fate of these chemicals. The class of chemical compounds to which a chemical belongs will influence its properties: chromium and zinc are metals, cyanide is an inorganic acid/conjugate base. The following is a summary of these characteristics for the indicator contaminants selected for the site.

Chromium

The mobility of chromium in the environment depends, to a large extent, on the oxidations of the element. Chromium is most commonly found in the +3 (Cr III) and +6 (Cr VI) oxidation states. Cr IV is thought to be more mobile through the environment than Cr III. This is likely because Cr III is more readily adsorbed or completed to soil particles, metal oxides, or organic matter than is Cr VI, rendering it relatively immobile. Most of the Cr III found in soils is in the form of mixed Cr III and Fe III oxides or in the lattice of

minerals. However, Cr III can be mobilized in very acidic media (Kabata-Pendias and Pendias 1984). The reduction of Cr IV to Cr III, and hence a decrease in its mobility, was observed by Bartlett and Kimble (1976) only in soils containing organic matter, and not in a soil which was characterized as "organic free". Schroeder and Lee (1975) found that Cr VI reduction also occurs in the presence of ferrous iron (Fe II), dissolved sulfides, and organic compounds, especially those with sulfhydryl groups. Cr III oxidation was found to occur only in the presence of large amounts of MnO_2 and at a very slow rate by atmospheric oxygen. Both the Electric Power Research Institute (EPRI 1986), and Bartlett and James (1979) also observed oxidation of Cr III to Cr VI in soils with high MnO_2. Their results point to an oxidation-reduction-reoxidation scenario with a steady state or equilibrium being reached.

Cyanide

The mobility of cyanide is influenced by the cations with which it is associated. The more soluble salts, such as sodium or potassium cyanide, will be more mobile. Complex anions of cyanide, such as ferrocyanide, can be mobile in soils (Alesii and Fuller 1976). Cyanide mobility was found to be pH dependent; low pH soils decrease the mobility of cyanide. In addition, higher iron oxide and clay content were also found to decrease the mobility of cyanide. In general, though, cyanide was found to be very mobile in soil. Ultimately, cyanide in soil or groundwater will be biodegraded. Both anaerobic and aerobic degradation of cyanide has been reported with the ultimate breakdown products being carbon dioxide and ammonia. The rate of the metabolism is not known, but would be related to the presence of microorganisms capable of metabolizing cyanide as well as the concentrations of cyanide in the soil or groundwater.

Zinc

The soil chemistry of zinc is governed by the pH of the soil. In acidic soils, zinc adsorption is related to cation exchange sites, while in alkaline soils the chemistry is dominated by organic ligands. Cation exchange processes will be influenced by the type of cations moving through the soil. This implies that when there are mobile metals, competition for the binding sites will occur, and zinc may be mobilized. In more alkaline soils zinc can form an organo-zinc complex, which would also increase the metal's mobility (Kabatas-Pendias and Pendias 1984).

Metal oxides also influence the mobility of zinc in soils. Zinc was found to be highly associated with oxides. Clay is also capable of sorbing zinc. Soils that contain high levels of calcium and phosphorous immobilize the metal (Kabatas-Pendias and Pendias 1984).

4.2 MECHANISMS OF MIGRATION

Contaminants dissolved in groundwater may migrate both horizontally within an aquifer as well as vertically between aquifers. As has been discussed in the RI report, the permeability of the water table aquifer is high, but horizontal movement is slow due to the low hydraulic gradient. This is exemplified by the fact that it is estimated that the plume of the contamination in the water table aquifer would only extend 515 feet from the source areas in the direction

of flow. (This modeling was performed using a worst-case scenario and assuming the groundwater contamination originated in 1969). Vertical movement of groundwater in the water table aquifer would appear to be significant as the site is located within an area of recharge for the Floridan Aquifer. A semi-confining layer of sandy clay separates the water table aquifer from the Floridan Aquifer. This layer is reportedly not continuous in the area of the site, so downward migration of contamination to the Floridan Aquifer from the water table aquifer is possible.

The results from sampling at different depths within the water table aquifer indicate that contaminant levels are very similar in the shallow, medium and deep wells of this aquifer. In most cases, these values may represent natural levels since, generally, levels detected were near the detection limits below which constituents were found in the background well. Although, as stated above, the potential exists for contamination of the Floridan Aquifer from the overlying water table aquifer, this is not demonstrated by the existing data.

Because remedial measures have already begun at the Independent Nail Company site, further infiltration of soil contaminants to the groundwater is not expected. Therefore, for all exposure pathways, the maximum concentrations presently found in the groundwater will be used as the plausible maximum exposure concentration. Use of these maximum concentrations may overestimate risk because most concentrations detected were much lower. Well data are available for 150 feet to the south and approximately 250 feet southwest of the old lagoon (MW-1 and MW-6 respectively). Therefore, the detected concentrations in MW-1, 3, and 6 were used as the assumed maximum concentrations in the groundwater.

4.3 HUMAN RISK CHARACTERIZATION

The following presents a discussion of the potential human health risks associated with the contaminants of potential concern in groundwater; chromium, cyanide and zinc at the Independent Nail Company site.

4.3.1 TOXICITY CHARACTERIZATION

Chromium

Although epidemiological studies of worker populations have clearly established that chromium VI is a human carcinogen by inhalation exposure, chromium VI has not been shown to be carcinogenic by the oral route (EPA 1984b). An oral reference does (RfD) for chromium VI of 5×10^{-3} mg/kg/day has been established (EPA 1988a). An RfD is an estimate of the daily exposure to the human population (including sensitive subpopulations) that is likely to be without appreciable risk of deleterious health effects during a lifetime.

Cyanide

The carcinogenicity of cyanide has not been established. EPA (1984d) has classified cyanide as a Group D agent (i.e., not classified with respect to carcinogenicity). The oral reference dose (RfD) for free cyanide is 0.02 mg/kg/day (EPA 1988a).

Zinc

With respect to carcinogenicity, zinc is categorized by EPA (EPA 1984e) as a Group D agent (i.e., not classified). An oral reference dose (RfD) for zinc of 0.21 mg/kg/day has been derived by EPA (1984e).

4.5 COMPARISON TO STANDARDS AND CRITERIA

Guidance provided in the Superfund Public Health Evaluation Manual (EPA 1986a) directs that concentrations of contaminants at exposure points be compared with applicable or relevant and appropriate requirements (ARARs) that have been developed to protect human health. EPA's interim guidance on ARARs (EPA 1987b) defines ARARs as follows:

> Applicable Requirements includes those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstances at a CERCLA site.
>
> "Applicability" implies that the remedial action or the circumstances at the site satisfy all of the jurisdictional prerequisites of a requirement...
>
> Relevant and Appropriate Requirements include those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that, while not "applicable" to a hazardous substance, pollutant, contaminants, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site.

For water that is or may be used for drinking, the maximum contaminant levels under the Safe Drinking Water Act are generally the applicable or relevant and appropriate standard. At the Independent Nail Company Site, where the ground water is a potential source of drinking water, Maximum Contaminant Levels (MCLs), are the relevant and appropriate requirements for groundwater. MCLs are concentration standards which are enforceable by law, Health Advisories and secondary MCLs are nonenforceable health-based goals and guidelines, respectively.

Primary and Secondary Maximum Contaminant Limits (MCLs and SMCLs). Primary MCLs are Federal drinking water standards promulgated under the Safe Drinking Water Act (SDWA). Generally, a MCL for a toxic chemical represents the allowable lifetime exposure to the contaminant for a 70-kg adult who is assumed to ingest two liters of water per day. In addition to health factors, a MCL is required by law to reflect the technological and economic feasibility of removing the contaminant from the water supply. The limit set must be feasible given the best available technology and treatment techniques (EPA 1986a).

Secondary drinking water regulations consist primarily of secondary maximum contaminant levels (SMCLs) contaminants that primarily affect the aesthetic qualities (such as taste and odor) of drinking water. Secondary MCLs are not Federally enforceable standards, they are intended as guidelines for use by States in regulating water supplies.

The State of South Carolina has promulgated drinking water standards (MCLs) by adopting the Federal MCLs developed under SDWA. According to EPA guidance on the use of MCLs as ARARs (EPA 1987b), MCLs are applicable at the tap where the water will be provided directly to 25 or more people or will be supplied to 15 or more service connections, but in addition are relevant and appropriate requirements against which to evaluate groundwater quality.

Drinking Water Health Advisories. In addition to MCLs and MCLGs, EPA provides drinking water suppliers with guidance on various chemicals that may be encountered in a water system. The Office of Drinking Water's nonregulatory health advisories are concentrations of contaminants in drinking water at which adverse effects would not be anticipated to occur. A margin of safety is included to protect sensitive members of the population. The health advisory numbers are developed from data describing noncarcinogenic and end points of toxicity. They do not incorporate quantitatively any potential carcinogenic risks from such exposure. Health Advisories are further described in EPA (1986a), which states that "under certain circumstances and when the appropriate toxicological data are available, health advisories may be developed for one-day, ten-day, longer-term (several months to several years), and lifetime durations of exposure. One-day and ten-day advisories are calculated for a 10 kg child (a one-year old infant) assumed to drink one liter of water per day. Lifetime health advisories are calculated for a 70 kg adult, assumed to drink two liters of water per day. Longer term health advisories are calculated for both a 10 kg child and a 70 kg adult."

Chromium, cyanide, and zinc have been detected in groundwater at the Independent Nail Company site at maximum concentrations of 0.058 mg/liter, 0.110 mg/liter and 0.098 mg/liter, respectively. A comparison of these contaminant concentrations with drinking water MCLs, SMCLs, and Health Advisories indicates that total chromium is the only groundwater contaminant at the Independent Nail Company site which exceeds any of these standards or criteria.

The MCL for total chromium in drinking water are 0.05 mg/liter and 0.12 mg/liter, respectively (EPA 1985e). The 1-day, 10-day and lifetime drinking water Health Advisories for chromium are 1.4 mg/liter, 1.4 mg/liter, and 0.12 mg/liter, respectively (EPA 1987a). The longer term drinking water Health Advisory for chromium for a 70 kg adult and a 10 kg child are 0.84 mg/liter and 0.24 mg/liter, respectively (EPA 1987a). Thus, the highest total Chromium concentration detected in groundwater at the Independent Nail Company site (0.058 mg/liter) slightly exceeds the current Federal and State MCL (0.05 mg/liter), but is lower than the proposed SMCL (0.12 mg/liter). It should be noted that the proposed secondary MCL is more than twice the highest concentration detected at the site.

No MCLs have been established for cyanide; however, drinking water Health Advisories have been derived (EPA 1987a). The 1-day, 10-day, and lifetime Health Advisories for cyanide are 0.22 mg/liter, 0.22 mg/liter, and 0.154 mg/liter, respectively. The longer term Health Advisory for cyanide for a 70 kg adult and 10 kg child are 0.77 mg/liter and 0.22 mg/liter, respectively (EPA 1987a). Thus, the highest concentration of cyanide detected at the Independent Nail Company site (0.110 mg/liter) is below each of these Health Advisory criteria.

A secondary MCL of 5 mg/liter has been established for zinc based on organoleptic (taste/odor) considerations (EPA 1986e). The highest concentration of zinc detected in groundwater at the Independent Nail Company site (0.098 mg/liter) is well below the secondary MCL. No primary MCLs, or drinking water Health Advisories for zinc have been established.

Table 4-1 presents a comparison of contaminant concentrations in groundwater and various drinking water standards and criteria.

4.6 ESTIMATION OF EXPOSURE AND RISK

Estimates of human exposure to contaminants at the Independent Nail Company Site will be determined using conservative assumptions. Conservative assumptions tend to overestimate exposure so that the upper end of the range of actual exposures. Human exposure can be expressed in terms of a chronic daily intake (CDI), which is the amount of a substance taken into the body per unit weight per unit of time, or mg/kg/day. For noncarcinogens, the CDI is determined by averaging intake over the period of exposure.

In evaluating health risks from exposure to noncarcinogens (the category into which the three chemicals of potential concern at the site fall), risk reference doses (RfDs) will be used. The RfD, expressed in units of mg/kg/day, is an estimate of the daily exposure to the human population (including sensitive subpopulations) that is likely to be without an appreciable risk of deleterious effects during a lifetime. RfDs are typically derived either from human studies involving workplace exposures or from experimental animal studies.

Potential risks for noncarcinogens are presented as the ratio of the chronic daily intake exposure to the risk reference dose (CDI:RfD). This is a useful reference point for gauging the potential adverse noncarcinogenic health effects that could potentially occur. A hazard index less than 1 indicates that an adverse noncarcinogenic health effect is unlikely to occur. A clear conclusion should not be categorically made, however, that all hazard indices less than one are acceptable and that all hazard indices greater than one are unacceptable. This is a consequence of the perhaps one order of magnitude or greater uncertainty inherent in estimates of the RfD and CDI.

4.7 SUMMARY AND CONCLUSIONS

Human Exposures and Risks

Potential human health impacts associated with the chemicals of potential

TABLE 4-1

COMPARISON OF CONTAMINANT CONCENTRATIONS IN GROUNDWATER TO DRINKING WATER STANDARDS AND CRITERIA

Contaminant	Highest Concentration Detected in Groundwater (mg/liter)	Primary MCL (mg/liter)	Secondary MCL (mg/liter)	Health Advisory (c)				
				1-Day	10-Day	Longer-Term		Lifetime
						10 kg child (mg/kg/day)	70 kg Adult (mg/kg/day)	
Chromium VI	0.058	0.05 (total Cr) (a)	---	1.4	1.4	0.24	0.84	0.12
Cyanide	0.110	---	---	0.22	0.22	0.22	0.77	0.154
Zinc	0.098	---	5 (b)	---	---	---	---	---

(a) EPA 1985e
(b) EPA 1986e
(c) EPA 1987a

concern in the groundwater at the site were assessed by (1) comparison of the maximum detected chemical concentrations to standards [Applicable or Relevant and Appropriate Requirements (ARARS)] or other criteria developed for the protection of human health, and (2) development of exposure associated with various groundwater uses and to derive quantitative estimates of associated risks.

The maximum groundwater concentrations of the chemicals of potential concern were compared to ARARs or other guidance - Federal Maximum Contaminant Levels (MCLs), Secondary Maximum Contaminant Levels (SMCLs), and drinking water Health Advisories. This comparison revealed that the highest chromium concentration detected in groundwater (0.058 mg/liter) slightly exceeded the MCL of 0.05 mg/liter for total chromium. However, all other contaminant concentrations were below currently available MCL, SMCL, and/or Health Advisory drinking water standards.

For the quantitative assessment of risk, three potential exposure pathways were identified was the Independent Nail Company site:

- ingestion of groundwater
- ingestion of milk;
- ingestion of beef.

The chemicals of potential concern are each noncarcinogens when ingested, and therefore, potential health risks associated with each chemical for each of the above exposures were expressed as the ratio of the chronic daily intake to the reference dose (CDI:RfD). The CDI:RfD ratios for each chemical within a given pathway were summed to derive the hazard index. Table 4-2 presents a summary of the CDIs and oral RfDs used in the present analysis for evaluating the potential health risks of each contaminants. Also included in Table 4-2 is a summary of the hazard indices associated with chemicals of potential concern for each of the three exposure pathways evaluated. The hazard index for each pathway was less than one, indicating there is a low potential for adverse noncarcinogenic health effects from ingestion of groundwater, milk, and/or beef at the Independent Nail Company site.

Wildlife Exposures and Risks

Risks to aquatic and terrestrial species potentially exposed to chromium, cyanide, and zinc also were assessed. Since no water quality data is available from surface water, potential exposures to aquatic life were assessed assuming that groundwater chemicals of potential concern may discharge into Salt Creek and its associated wetlands at concentrations equal to the maximum concentrations detected in groundwater. Risks were estimated by comparing these groundwater concentrations to the ambient water quality criteria for each chemical. Potential exposures for terrestrial species were assessed assuming that cows or other wildlife use contaminated groundwater as a sole source of drinking water and ingest an amount of water daily that is easily equivalent to 20 percent of their body weight. The maximum concentrations of the chemicals of potential concern in groundwater were again used as exposure concentrations. Risks were determined by comparing the estimated chemical intakes or the water concentration to toxic levels or not effect levels identified from the literature.

Maximum concentrations of chromium and cyanide in groundwater each exceeded its acute and chronic ambient (surface) water quality criteria, whereas concentrations of zinc in groundwater were below its criteria. However, it is not believed that any of the chemicals of potential concern at the concentrations detected in the groundwater in the monitoring wells at the Independent Nail Company site will reach Salt Creek or surrounding wetlands in concentrations associated with toxic effects in aquatic life due to dispersion and dilution of concentrations within groundwater and surface water.

Terrestrial wildlife species do not appear to be at any increased health risks from the ingestion of chromium, cyanide and zinc at the maximum concentrations detected in groundwater at the site as the water concentrations or estimated intake levels are well below those levels believed to be associated with toxic effects.

5.0 Enforcement Analysis

The Independent Nail Company Site was added to the NPL in September 1984, and EPA assumed lead responsibility for the site at that time. Due to the nature of contamination at the site and its well-documented history, the Blake and Johnson Company and the Independent Nail Company are the two identified Potentially Responsible Parties. A notice letter was sent to the Independent Nail Company in June 1985. Since they declined to participate, EPA proceeded to conduct the RI/FS. The RI/FS commenced in June 1985.

6.0 Community Relations History

The following community relations activities were performed at the Independent Nail Company Site:

* A Fact Sheet on the Site was prepared in November 1986.

* Community Relations Plan finalized January 1987

* An information repository was established in January at:

  Beaufort County Library (803) 525-7279
  710 Craven Street
  Beaufort, South Carolina 29902

  Contact: Ms. Julie Zachowski, Librarian

* A press release providing an opportunity for a public meeting and information on the opening of the public comment period was issued July 21, 1987.

* Public notices providing the same information ran in the July 23 and July 24, 1987 editions of the Beaufort Gazette, a daily paper determined to be the most widely read in the area.

TABLE 4-2

SUMMARY OF HAZARD INDICES FOR EACH EXPOSURE PATHWAY[a]

Exposure Pathway/Contaminant	Chronic Daily Intake (CDI) Over 74 Years (mg/kg/day)	Oral Reference Dose (RfD) (mg/kg/day)	CDI:RfD
Ingestion of Contaminated Ground water:			
Chromium VI	1.8×10^{-3}	5×10^{-3}[c]	3.6×10^{-1}
Cyanide	3.5×10^{-3}	2×10^{-2}[c]	1.75×10^{-1}
Zinc	3.1×10^{-3}	2.1×10^{-1}[d]	1.48×10^{-2}
HAZARD INDEX	---	---	5.5×10^{-1} (<1)
Ingestion of Contaminated Milk:[b]			
Chromium VI	1.2×10^{-6}	5×10^{-3}[c]	2×10^{-4}
Zinc	2×10^{-3}	2.1×10^{-1}[d]	9.5×10^{-3}
HAZARD INDEX	---	---	9.7×10^{-3} (<1)
Ingestion of contaminated Beef:[b]			
Chromium VI	1×10^{-4}	5×10^{-3}[c]	2×10^{-2}
Zinc	2.7×10^{-3}	2.1×10^{-1}[d]	1.3×10^{-2}
HAZARD INDEX	---	---	3.3×10^{-2} (<1)
TOTAL HAZARD INDEX FOR ALL 3 PATHWAYS (Sum of individual hazard indices)			6×10^{-1} (<1)

[a] All hazard indices are less than one (<1) indicating low potential for adverse noncarcinogenic health effects.
[b] Cyanide was not included in this analysis because it does not bioaccumulate (EPA 1987a).
[c] EPA 1988a.
[d] EPA 1984e.

* A public notice as to the availability of the Operable Unit One ROD and the Remedial Design for Operable Unit One ran in May 1988 in the Beaufort Gazette.

* A public notice as to the availability of the draft Operable Unit Two RI report and the proposed plan was run on June 30, 1988. This notice also provided the public with an opportunity for a public meeting and notification of the opening of the public comment period. This public notice ran in the the Beaufort Gazette.

* A press release providing the same information as the June 30 public notice was also prepared.

No opposition to the recommended action is anticipated.

7.0 STATE INVOLVEMENT

The State of South Carolina has been actively involved with the Independent Nail Company site since it was first discovered.

They have been a part of official document reviews and have concurred with activities at the site to date.

8.0 SELECTED REMEDIAL ALTERNATIVE

From an analysis of all available and pertinent information regarding the Independent Nail Company Site, it is concluded that additional remedial actions are not necessary for the protection of human health or the environment. Therefore the selected remedial alternative at the site is No Action.

It is believed that the source control remedial action conducted March 28 - May 27, 1988 at the site had little or no impact on groundwater quality in the area of the site. After a final round of sampling to confirm this, a decision as to whether monitoring of the wells at the site should be continued or the wells abandoned will be made.

COST OF RECOMMENDED REMEDIAL ACTION

This remedial action has no costs associated with it.

The remaining sampling and well abandonment costs have been included as part of the Operable Unit One Remedial Action costs.

THE STATUATORY DETERMINATIONS

* Protection of Human Health and The Environment

  The selected remedy is protective of human health and the environment, as conditions at the site were shown in the risk assessment to pose no threat.

  No unacceptable short-term risks or cross-media impacts will be caused by this remedy.

* Attainment of ARARs

  The selected remedy will attain all applicable or relevant and appropriate requirements.

  The following were identified as the Federal and State ARARs for this site:

  * Occupational Safety and Health Act (OSHA)
    No health and safety plan will be necessary.

  * Safe Drinking Water Act (SDWA)
    The maximum concentration of chromium detected in a well on-site was 58 ppb. This is above the MCL for chromium (50 ug/l), but less than half of the MCLG. All other wells had chromium concentrations less than the MCL.

* Endangered Species Act
  The recommended remedial alternative is protective of species listed as endangered or threatened under the Endangered Species Act.

* State Drinking Water Standards
  Maximum contaminant levels established by the State of South Carolina regulations are adopted from those of the Federal Safe Drinking Water Act, and have been addressed in this ROD.

* Clean Water Act
  Soil remediation is aimed at source control, and implementation of the recommended alternative would result in an end to potential contamination of surface water.

* Utilization of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable (MEP).

No alternatives were developed for Operable Unit Two at this site as the endangerment assessment showed there was no risk to human health or the environment from groundwater. Additionally, all except one well had metals (inorganics) at concentrations less than any ARAR. The one well contained chromium at .008 ppm over the federal drinking water standard of .05 ppm. This amount is within the analytical variance of 20% for CLP labs and is therefore not considered adequate to justify an expensive treatment at the site.

This remedy is protective, effective, attains ARARs and is the most cost effective solution for the site.

For the above reasons, treatment of groundwater at this site is impracticable.

* **Preference for treatment as a Principal Element**

The preference for treatment as a principal element was not satisfied, due to the "no action" alternative having been determined to be the best solution for the site.

OPERATION AND MAINTENANCE

No long-term operation and maintenance requirements are expected for this alternative. The Operable Unit One ROD mentions long-term monitoring as a possibility due to the lack of data on the status of groundwater.

ATTACHMENT 1

Responsiveness Summary

1. Overview

A press release announcing the opportunity for a public meeting was issued on June 29, 1988. Public notices announcing the opportunity for a public meeting and the opening of the public comment period appeared in the June 30 issue of the Beaufort Gazette, the most widely read newspaper in the area of the Independent Nail Company Site. No requests for the meeting or comments on the Operable Unit Two Remedial Investigation Report were received.

2. Community Profile and History of Community Involvement

The City of Beaufort is located on the southeast side of Beaufort County. It is forty-five miles northeast of Savannah, Georgia, and thirty miles north-northeast of Hilton Head, South Carolina. Beaufort County consists largely of a collection of sixty-eight islands, defined by a complex network of waterways. The county is an extremely sensitive environmental area -- according to one local official, it is one of the last "pristine" environments on the east coast.

Tourism, recreation, and fishing are major local industries, with several resorts in the county (including Hilton Head) noted for their boating and golf. There are numerous rivers, creeks, and public and private beaches and golf courses found throughout the county. Several international golf and tennis tournaments are held at Hilton Head each year. There is both recreational and commercial fishing, and local residents are proud of the county's reputation for good seafood.

There is also a large military presence in the county, with approximately 15,000 military personnel living there. In addition to the Air Station, the Marine Corps has a large training camp at Parris Island, which is immediately south of Port Royal Island. According to the Beaufort County Joint Planning Commission (BCJPC), 22,000 recruits are trained at Parris Island each year. There is also a large naval hospital in Beaufort County.

While the county is now considered relatively rural, commercial and residential development is occurring rapidly. According to BCJPC, the county's population has grown 28% since 1980 -- growth in the City of Beaufort has been lower than 28%, while that in the resort areas such as Hilton Head has been much higher.

Both the city and county governments are located in the City of Beaufort. The city is governed by a Mayor and a five-member City Council, all of whom serve four-year terms. There is also a City Manager who is responsible for most of the day-to-day tasks of running the city. The county is run by a County Administrator and a nine-member County Council. These Council members serve two year terms; four are selected at large, five by district. The County Council has a one-member Coastal Council Board/Commission that oversees environmental matters.

The principal State agency involved with the Site is the South Carolina Department of Health and Environmental Control (SCDHEC). SCDHEC has a broad array of responsibilities, including conducting restaurant inspections, monitoring water quality, and handling solid and hazardous waste issues. One elected official said that any resident complaints about environmental matters concerning the Site would be referred to SCDHEC.

County residents, however, have expressed virtually no interest in this site -- no complaints have been received by local officials. There has also been very little publicity about the site -- the only newspaper articles on the site appeared when the site was listed on the NPL. However, officials noted that this seeming lack of specific concern could change rapidly if there is sufficient adverse publicity on the site. The source of this potential, according to local officials, is that the citizens are very interested in environmental issues in general. The county's rapid rate of development has heightened this concern. Many people live in the area because of its natural beauty and recreation opportunities, and they do not want these characteristics ruined. Furthermore, one official commented that many residents, especially in the resort areas, are well-educated retirees who have the time, inclination, and expertise to become heavily involved in local environmental issues. As evidence of this interest, local officials point to heavy attendance at public meetings on issues such as local development projects and a proposal to build a county incinerator.

According to local officials, more residents are concerned about the Wamchem Site then about the Independent Nail Site because of the contaminants involved and Wamchem's proximity to residents. One resident contacted during the preparation of this plan was not aware of the Independent Nail Site; because of his proximity to the Wamchem Site and nearby McCalley Creek, however, he was quite concerned about the contaminants emanating from Wamchem. Even though there has been little publicity or outward evidence of citizen concern about the Wamchem Site, this resident estimated that dozens of residents are directly affected by the Wamchem Site. He thought residents would contact their County Councilman, State Legislator, or SCDHEC if they wanted to register their concerns. This resident also is interested in environmental issues in general and would like to receive any information EPA distributes on the Independent Nail Site.

Key Community Concerns

The primary concern expressed by every interview was the possible contamination of area groundwater. Further investigations in the course of preparing the community relations plan, however, revealed additional concerns dealing with the local industrial base and financial responsibility for the cleaup. These additional concerns currently do not seem to be pressing. According to the people who expressed them, however, these concerns could flare up quickly if activities at the Site or adverse publicity about the Site's affect on the local environment warrant an increase in community concern.

Detail descriptions of concerns expressed by local officials during community interviews are presented below:

1. Groundwater Contamination

Even though the homes and businesses around the Independent Nail Site are connected to the city water supply, local officials stated that some residents there may use private wells. While officials have yet to receive a complaint concerning the quality of the water from any private well, they want to be sure that this water is not contaminated. Furthermore, local officials are concerned that any groundwater contamination problem could extend far beyond the immediate site area. Because the Site rests over the Floridan aquifer, officials want to be sure that this significant source of drinking water is not threatened.

2. Preservation of the Natural Environment

According to local officials, many of the residents who live in the area do so because of its natural beauty. No residents have expressed concern about the effect of the Independent Nail Site on their environment. They have been involved in other local environmental issues, however, and officials feel this general interest could become focused on this site once the public is aware of its existence. For this reason, officials feel that in order to avoid any unnecessary concern, it is especially important that any publicity about the Site be as accurate and objective as possible.

3. Possible Financial Liability

According to Site files, Beaufort County once owned the land now occupied by the Site, and leased it to Blake and Johnson. EPA at one time identified the county as a PRP because of this relationship. The county, however, has insisted that it had no connections with the operations at the Site, and the County Administrator says that the county is no longer designated a PRP. County officials, however, are still interested in the PRP search process and are concerned that the appropriate parties pay for the cleanup.

4. Preservation of Beaufort's Ability to Attract Industry

Currently, one of the major industries in Beaufort County is tourism; according to one local official, there is only one chemical company in the area. Yet one Beaufort County Councilman said that the county needs both tourism and other, heavier industries. He believes that industries other than those found in the tourist trade can provide Beaufort County residents with jobs that have higher salaries and more potential for advancement In order to encourage a business growth and diversity, the Councilman does not want the county to gain a reputation for hostility to non-tourism industries. Therefore, the Councilman is concerned that publicity about cleaning up the Site and finding PRPs to pay for the cleanup may give Beaufort a reputation for being anti-industry.

3. Summary of Public Comments and Agency Responses

As no comments, oral or written, were received, this Section is not applicable.

4. Remaining Concerns

No remaining concerns have been identified.

Community Relations activities to date are listed in the ROD.

ATTACHMENT 2

Document Number: IND-001-0692 To 0716 Date: / /

Title: Final Community Relations Plan

Type: PLAN
Author: Watson, Sara: Camp Dresser & McKee
Recipient: Wright, Russell L: US EPA

Document Number: IND-001-1210 To 1211 Date: / /

Title: (Cover letter for the Draft Feasibility Study for Independent Nail)

Type: CORRESPONDENCE
Author: Roth, Thomas M: US EPA
Recipient: Rakers, Gerald L: Independent Nail of SC

Document Number: IND-001-1301 To 1301 Parent: IND-001-1292 Date: / /

Title: (Map of lagoon and plant at Independent Nail)

Type: GRAPHIC
Author: none: none
Recipient: none: none

Document Number: IND-001-1306 To 1307 Date: / /

Title: (Cover letter for the Draft Feasibility Study for Independent Nail)

Type: CORRESPONDENCE
Author: Roth, Thomas M: US EPA
Recipient: Geitner, Harvey: US Dept of the Interior

Document Number: IND-001-1309 To 1309 Parent: IND-001-1308 Date: / /

Title: (Listing and explanation of Status Reviews Species)

Type: PLAN
Author: none: US Dept of the Interior
Recipient: none: none

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Document Number: IND-001-1337 To 1337 Date: / /

Title: (Certified Mail Receipt)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none
Attached: IND-001-1338 IND-001-1339

Document Number: IND-001-1343 To 1343 Parent: IND-001-1341 Date: / /

Title: (Envelope)

Type: OTHER
Author: none: Vinson & Elkins
Recipient: Bennett, Giezelle S: US EPA

Document Number: IND-001-1349 To 1349 Parent: IND-001-1348 Date: / /

Title: (Domestic Return Receipt)

Type: CORRESPONDENCE
Author: none: none
Recipient: Rakers, Gerald L: Independent Mail of SC

Document Number: IND-001-1353 To 1353 Parent: IND-001-1352 Date: / /

Title: (Receipt for Certification)

Type: CORRESPONDENCE
Author: none: none
Recipient: Baumberger, Martha: County of Beaufort SC

Document Number: IND-001-1360 To 1360 Parent: IND-001-1359 Date: / /

Title: (Domestic Return Receipt)

Type: CORRESPONDENCE
Author: none: none
Recipient: Sigmund, Paul: County of Beaufort SC

Document Number: IND-001-1379 To 1379 Date: / /

Title: (Domestic Return Receipt)

Type: CORRESPONDENCE
Author: illegible: none
Recipient: Radford, Norman D: Vinson & Elkins
Attached: IND-001-1380 IND-001-1381

Document Number: IND-001-1380 To 1380 Parent: IND-001-1379 Date: / /

Title: (Certified Mail Receipt)

Type: CORRESPONDENCE
Author: none: none
Recipient: Radford, Norman D: Vinson & Elkins

Document Number: IND-002-0298 To 0298 Parent: IND-002-0294 Date: / /

Title: (Handwritten notes with address of McDill)

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: IND-002-0380 To 0381 Date: / /

Title: (Letter accompanying a request for copies of the draft Work Plan)

Type: CORRESPONDENCE
Author: Ravan, Jack E: US EPA
Recipient: Radford, Norman D: Vinson & Elkins

Document Number: IND-002-0382 To 0383 Date: / /

Title: (Letter denying the request in order to substantiate the claim of confidentiality)

Type: CORRESPONDENCE
Author: Ravan, Jack E: US EPA
Recipient: Johnson, Richard C: Camp Dresser & McKee

Document Number: IND-002-0391 To 0428 Parent: IND-002-0390 Date: / /

Title: Summary of Remedial Alternative Selection

Type: PLAN
Author: none: US EPA
Recipient: none: none

Document Number: IND-002-0233 To 0293 Parent: IND-002-0229 Date: 12/01/67

Title: Lease - Beaufort Plant

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: IND-002-0299 To 0362 Parent: IND-002-0294 Date: 12/01/67

Title: (Lease agreement between County of Beaufort and Blake & Johnson Co)

Type: LEGAL DOCUMENT
Author: none: none
Recipient: none: none

Document Number: IND-001-1255 To 1255 Parent: IND-001-1264 Date: 03/20/62

Title: (Letter accompanying a check for the balance in full of the purchase price for the Old Shanklin School Rd property)

Type: CORRESPONDENCE
Author: Harvey, W B: Harvey Harvey & Battey
Recipient: Levin, Julian S: County of Beaufort SC

Document Number: IND-002-0227 To 0227 Date: 03/20/68

Title: (Letter accompanying a check for the balance in full of the purchase price of the Old Shanklin School Road property)

Type: CORRESPONDENCE
Author: Harvey, W B: Harvey Harvey & Battey
Recipient: Levin, Julian S: County of Beaufort SC

Document Number: IND-001-1262 To 1262 Date: 06/11/80

Title: (Summarizations of test samples taken)

Type: CORRESPONDENCE
Author: Gross, Robert G: SC Dept of Health & Environmental Control
Recipient: Shepherd, Willie: Blake & Johnson
Attached: IND-001-1263

Document Number: IND-001-1328 To 1328 Date: 06/11/80

Title: (Letter regarding samples showing contamination from wastewater disposal operations)

Type: CORRESPONDENCE
Author: Gross, Robert G: SC Dept of Health & Environmental Control
Recipient: Shepherd, Willie: Blake & Johnson
Attached: IND-001-1329

Document Number: IND-002-0217 To 0217 Date: 06/11/80

Title: (Letter regarding sample analysis)

Type: CORRESPONDENCE
Author: Gross, Robert G: SC Dept of Health & Environmental Control
Recipient: Shepherd, Willie: Blake & Johnson

Document Number: IND-002-0222 To 0222 Parent: IND-002-0220 Date: 06/11/80

Title: (Letter regarding contamination to be found through well water samples)

Type: CORRESPONDENCE
Author: Gross, Robert G: SC Dept of Health & Environmental Control
Recipient: Shepherd, Willie: Blake & Johnson

Document Number: IND-001-1302 To 1305 Date: 02/26/81

Title: Potential Hazardous Waste Site Identification & Preliminary Assessment

Type: PLAN
Author: none: US EPA
Recipient: none: none

Document Number: IND-001-1292 To 1300 Date: 05/18/81

Title: Potential Hazardous Waste Site Final Strategy Determination

Type: PLAN
Author: illegible: US EPA
Recipient: none: none
Attached: IND-001-1301

Document Number: IND-002-0218 To 0219 Date: 11/06/81

Title: (Letter regarding samples of groundwater)

Type: CORRESPONDENCE
Author: Duncan, Donald A: SC Dept of Health & Environmental Control
Recipient: Shaw, Lewis: Bureau of Wastewater & Stream Quality Control

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Document Number: IND-001-0287 To 0288 Parent: IND-001-0001 Date: 11/06/81

Title: (Memo reporting findings of contamination of shallow aquifer)

Type: CORRESPONDENCE
Author: Duncan, Donald A: SC Dept of Health & Environmental Control
Recipient: Shaw, Lewis: SC Dept of Health & Environmental Control

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Document Number: IND-001-1263 To 1263 Parent: IND-001-1262 Date: 06/22/82

Title: (Analytical services data sheet for solid waste and hydrology)

Type: FINANCIAL/TECHNICAL
Author: none: SC Dept of Health & Environmental Control
Recipient: none: none

Document Number: IND-001-1329 To 1329 Parent: IND-001-1328 Date: 06/22/82

Title: Analytical Services Data Sheet for Solid Waste and Hydrology

Type: PLAN
Author: none: SC Dept of Health & Environmental Control
Recipient: none: none

Document Number: IND-002-0213 To 0216 Date: 06/29/84

Title: (Letter notifying of Potentially Responsible Parties to undertake voluntary cleanup activities)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Rakers, Gerald L: Independent Nail of SC

Document Number: IND-001-1333 To 1334 Parent: IND-001-1332 Date: 07/10/84

Title: (Letter acknowledging receipt of earlier letter denying any responsibility or liability for any hazardous substances on the property)

Type: CORRESPONDENCE
Author: Rakers, Gerald L: Independent Nail of SC
Recipient: Fraley, Gregory D: US EPA

Document Number: IND-001-1335 To 1336 Date: 07/10/84

Title: (Duplicate of IND0011333)

Type: CORRESPONDENCE
Author: Rakers, Gerald L: Independent Nail of SC
Recipient: Fraley, Gregory D: US EPA

Document Number: IND-002-0220 To 0221 Date: 07/10/84

Title: (Letter denying any responsibility or liability for any hazardous substances that may have been released)

Type: CORRESPONDENCE
Author: Rakers, Gerald L: Independent Nail of SC
Recipient: Fraley, Gregory D: US EPA
Attached: IND-002-0222

Document Number: IND-002-0223 To 0223 Date: 09/19/84

Title: (Letter requesting an update of the status of Reference #4AW-ER)

Type: CORRESPONDENCE
Author: Rakers, Gerald L: Independent Nail of SC
Recipient: Fraley, Gregory D: US EPA

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Document Number: IND-001-1332 To 1332 Date: 10/01/84

Title: (Letter accompanying letters previously sent)

Type: CORRESPONDENCE
Author: Rakers, Gerald L: Independent Nail of SC
Recipient: Bennett, Giezelle S: US EPA
Attached: IND-001-1333

Document Number: IND-002-0224 To 0224 Date: 10/01/84

Title: (Letter responding to earlier correspondence)

Type: CORRESPONDENCE
Author: Rakers, Gerald L: Independent Nail of SC
Recipient: Bennett, Giezelle S: US EPA

Document Number: IND-001-1322 To 1322 Parent: IND-001-1322 Date: 10/16/84

Title: (Review of status of compliance of the facility)

Type: CORRESPONDENCE
Author: Bennett, Giezelle S: US EPA
Recipient: Rakers, Gerald L: Independent Nail of SC

Document Number: IND-002-0225 To 0225 Date: 10/16/84

Title: (Letter regarding status update)

Type: CORRESPONDENCE
Author: Bennett, Giezelle S: US EPA
Recipient: Rakers, Gerlad L: Independent Nail of SC

Document Number: IND-001-1330 To 1331 Date: 05/02/85

Title: Enforcement Profile

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: IND-001-1338 To 1338 Parent: IND-001-1337 Date: 06/20/85

Title: (Routing and Transmittal Slip)

Type: CORRESPONDENCE
Author: Ayala, P: none
Recipient: Bennett, Giezelle S: US EPA

Document Number: IND-002-0004 To 0007 Date: 06/20/85

Title: (Letter notifying of Potentially Responsible Parties)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Sigmund, Paul: County of Beaufort SC

Document Number: IND-001-1266 To 1267 Date: 06/26/85

Title: (Letter notifying of Potentially Responsible Party)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Rakers, Gerald L: Independent Mail of SC

Document Number: IND-001-1268 To 1271 Date: 06/26/85

Title: (Letter notifying of Potentially Responsible Party)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Sigmund, Paul: County of Beaufort SC

Document Number: IND-001-1272 To 1275 Date: 06/26/85

Title: (Letter notifying of Potentially Responsible Party)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Baumberger, Martha: County of Beaufort SC

Document Number: IND-001-1339 To 1340 Parent: IND-001-1337 Date: 06/26/85

Title: (Notification that Independent Nail is a potentially responsible party)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Rakers, Gerald L: Independent Nail of SC

Document Number: IND-001-1354 To 1358 Parent: IND-001-1352 Date: 06/26/85

Title: (Notification of intentions and abilities under CERCLA)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Baumberger, Martha: County of Beaufort SC

Document Number: IND-001-1361 To 1365 Parent: IND-001-1359 Date: 06/26/85

Title: (Notification of intentions and abilities under CERCLA)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Sigmund, Paul: County of Beaufort SC

Document Number: IND-002-0009 To 0011 Date: 06/26/85

Title: (Letter notifying of Potentially Responsible Parties)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Baumberger, Martha: County of Beaufort SC

Document Number: IND-002-0012 To 0013 Date: 06/26/85

Title: (Letter notifying of Potentially Responsible Parties for the contamination and related problems)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Rakers, Gerald L: Independent Nail of SC

Document Number: IND-001-1352 To 1352 Date: 06/27/85

Title: (Domestic Return Receipt)

Type: CORRESPONDENCE
Author: illegible: none
Recipient: Baumberger, Martha: County of Beaufort SC
Attached: IND-001-1353 IND-001-1354

Document Number: IND-001-1359 To 1359 Date: 06/27/85

Title: (Domestic Return Receipt)

Type: CORRESPONDENCE
Author: illegible: none
Recipient: Sigmund, Paul: County of Beaufort SC
Attached: IND-001-1360 IND-001-1361

Document Number: IND-001-1264 To 1264 Date: 07/02/85

Title: (Letter acknowledging the receipt of a previous letter inquiring about the release of hazardous substances)

Type: CORRESPONDENCE
Author: Sigmund, Paul: County of Beaufort SC
Recipient: Devine, Thomas W: US EPA
Attached: IND-001-1265

Document Number: IND-002-0226 To 0226 Date: 07/03/85

Title: (Letter stating that no facility had yet been built on the site as of 03/08/68)

Type: CORRESPONDENCE
Author: Sigmund, Paul: County of Beaufort SC
Recipient: Devine, Thomas W: US EPA

Document Number: IND-002-0228 To 0228 Date: 07/12/85

Title: (Letter confirming an extension until 01/08/85)

Type: CORRESPONDENCE
Author: McDill, James N: County of Beaufort SC
Recipient: Macfarlene, Kirk: US EPA

Document Number: IND-001-1258 To 1261 Date: 07/17/85

Title: (Letter addressing several aspects of the Hazard Ranking Package)

Type: CORRESPONDENCE
Author: Rakers, Gerald L: Independent Nail of SC
Recipient: Bennett, Giezelle S: US EPA

Document Number: IND-001-1324 To 1327 Date: 07/17/85

Title: (Letter regarding several aspects and concerns of the hazardous ranking package)

Type: CORRESPONDENCE
Author: Rakers, Gerald L: Independent Nail of SC
Recipient: Bennett, Giezelle S: US EPA

Document Number: IND-002-0229 To 0232 Date: 07/17/85

Title: (Letter addressing several aspects of the Hazard Ranking Package)

Type: CORRESPONDENCE
Author: Rakers, Gerald L: Independent Nail of SC
Recipient: Bennett, Giezelle S: US EPA
Attached: IND-002-0233

Document Number: IND-002-0294 To 0297 Date: 07/31/85

Title: (Letter addressing questions raised in letter of 06/26/85)

Type: CORRESPONDENCE
Author: Howell, Ladson F: Howell Gibson and Boney
Recipient: Devine, Thomas W: US EPA
Attached: IND-002-0298 IND-002-0299

Document Number: IND-001-0483 To 0483 Parent: IND-001-0481 Date: 08/26/85

Title: (Letter transmitting Interim Report for Independent Nail)

Type: CORRESPONDENCE
Author: Susan, James A: CC Johnson & Associates
Recipient: Johnson, Richard C: Camp Dresser & McKee

Document Number: IND-001-0481 To 0511 Date: 08/27/85 Confidential

Title: Interim Remedial Investigation/Feasibility Study

Type: PLAN
Author: none: none
Recipient: none: US EPA
Attached: IND-001-0482 IND-001-0483

Document Number: IND-001-0482 To 0482 Parent: IND-001-0481 Date: 08/27/85

Title: (Letter accompanying submission of Interim Report)

Type: CORRESPONDENCE
Author: Johnson, Richard C: Camp Dresser & McKee
Recipient: Wright, Russell L: US EPA

Document Number: IND-001-1256 To 1257 Date: 10/22/85

Title: (Letter responding to earlier concerns about the Hazard Ranking Package)

Type: CORRESPONDENCE
Condition: ILLEGIBLE
Author: Green, Richard D: US EPA
Recipient: Rakers, Gerald L: Independent Mail of SC

Document Number: IND-001-1350 To 1351 Parent: IND-001-1348 Date: 10/22/85

Title: (Letter regarding concerns about the Hazardous Ranking Packages, the Remedial Investigation/Feasibility Study and other Potentially Responsible Parties)

Type: CORRESPONDENCE
Author: Green, Richard D: US EPA
Recipient: Rakers, Gerald L: Independent Mail of SC

Document Number: IND-002-0014 To 0015 Date: 10/22/85

Title: (Letter addressing concerns about the Hazard Ranking Packages of the Remedial Investigation/Feasibility Study)

Type: CORRESPONDENCE
Author: Green, Richard D: US EPA
Recipient: Rakers, Gerald L: Independent Mail of SC

Document Number: IND-001-1348 To 1348 Date: 10/24/85

Title: (Domestic Return Receipt)

Type: CORRESPONDENCE
Author: none: none
Recipient: Rakers, Gerald L: Independent Nail of SC
Attached: IND-001-1349 IND-001-1350

Document Number: IND-001-0459 To 0480 Date: 10/28/85

Title: Data Management Plan

Type: PLAN
Author: Susan, James A: CC Johnson & Associates
Recipient: none: US EPA
Attached: IND-001-0460 IND-001-0461

Document Number: IND-001-0460 To 0460 Parent: IND-001-0459 Date: 10/28/85

Title: (Letter accompanying submission of Data Management Plan)

Type: CORRESPONDENCE
Author: Johnson, Richard C: Camp Dresser & McKee
Recipient: Cherry, Al: US EPA

Document Number: IND-001-0461 To 0461 Parent: IND-001-0459 Date: 10/29/85

Title: (Memo transmitting draft Data Management Plan)

Type: CORRESPONDENCE
Author: Susan, James A: CC Johnson & Associates
Recipient: Johnson, Richard C: Camp Dresser & McKee

Document Number: IND-001-1254 To 1256 Date: 11/05/85

Title: (Letter confirming a phone call expressing a desire to participate in the Remedial Investigation/Feasibility Study)

Type: CORRESPONDENCE
Author: Radford, Normar D: Vinson & Elkins
Recipient: Green, Richard D: US EPA

Document Number: IND-001-1341 To 1342 Date: 11/05/86

Title: (Letter confirming phone conversation and stating a wish to participate in the Remedial I nvestigation/Feasibility Study)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Green, Richard D: US EPA
Attached: IND-001-1343

Document Number: IND-002-0363 To 0364 Date: 11/05/86

Title: (Letter confirming a previous phone call of participation in the Remedial Investigation/Feasility Study)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Green, Richard D: US EPA

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cument Number: IND-001-1253 To 1253 Date: 12/06/86

Title: (Cover letter for a requested draft Work Plan)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Radford, Norman D: Vinson & Elkins

Document Number: IND-001-1249 To 1250 Date: 01/09/86

Title: (Letter requesting an additional thirty days to comment on the Proposed Plan of Action for the Remedial Investigation/Feasibility Study)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Devine, Thomas W: US EPA

Document Number: IND-001-1344 To 1345 Date: 01/09/86

Title: (Request for thirty additional days to comment on the proposed plan of action for the Remedial Investigation/Feasibility Study)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Devine, Thomas W: US EPA
Attached: IND-001-1346

Document Number: IND-001-1346 To 1347 Parent: IND-001-1344 Date: 01/09/86

Title: (Request for a copy of records pursuant to the Freedom of Information Act request)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: none: US EPA

Document Number: IND-001-1383 To 1384 Date: 02/24/86

Title: (Request for extension of comment period)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Devine, Thomas W: US EPA

Document Number: IND-001-0365 To 0366 Date: 02/24/86

Title: (Request for extension of time to comment on the proposed plan of action for the Remedial Investigation)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Devine, Thomas W: US EPA

Document Number: IND-001-1381 To 1382 Parent: IND-001-1379 Date: 03/21/86

Title: (Letter regarding status of the Remedial Investigation/Feasibility Study)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Radford, Norman D: Vinson & Elkins

Document Number: IND-001-1322 To 1322 Date: 03/26/86

Title: (Letter of transmittal for budget summary)

Type: CORRESPONDENCE
Author: Susan, James A: CC Johnson & Associates
Recipient: Dixon, Timothy: US EPA
Attached: IND-001-1323

Document Number: IND-001-1221 To 1228 Parent: IND-001-1219 Date: 03/27/86

Title: Interim RCRA/CERCLA Guidance On Non-Contiguous Sites & On-Site Management of Waste & Treatment Residue

Type: PLAN
Author: Porter, J Winston: US EPA
Recipient: file: US EPA

Document Number: IND-001-1240 To 1241 Parent: IND-001-1239 Date: 04/02/86

Title: (Letter expressing interest in a meeting in Atlanta)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Devine, Thomas W: US EPA

Document Number: IND-001-1239 To 1239 Date: 04/10/86

Title: (Cover sheet for memo)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none
Attached: IND-001-1240

Document Number: IND-001-1236 To 1236 Date: 04/11/86

Title: (Cover sheet for memo)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: none: none
Attached: IND-001-1237

Document Number: IND-001-1237 To 1238 Parent: IND-001-1236 Date: 04/11/86

Title: (Letter requesting clarification of the ownership responsibility according to CERCLA)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Devine, Thomas W: US EPA

Document Number: IND-002-0367 To 0367 Date: 04/11/86

Title: (Memo regarding Independent Nail)

Type: CORRESPONDENCE
Author: none: US EPA
Recipient: none: none

Document Number: IND-002-0368 To 0369 Date: 04/11/86

Title: (Letter stating other findings)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Devine, Thomas W: US EPA

Document Number: IND-001-1232 To 1235 Parent: IND-001-1229 Date: 04/28/86

Title: Laboratory Analysis Report

Type: FINANCIAL/TECHNICAL
Author: none: Davis & Floyd
Recipient: none: Independent Nail of SC

Document Number: IND-002-0373 To 0376 Parent: IND-002-0370 Date: 04/28/86

Title: Laboratory Analysis Report

Type: FINANCIAL/TECHNICAL
Author: none: Davis & Floyd
Recipient: none: Independent Nail of SC

Document Number: IND-001-1229 To 1231 Date: 06/20/86

Title: (Cover letter for recent Laboratory Analysis)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Devine, Thomas W: US EPA
Attached: IND-001-1232

Document Number: IND-002-0370 To 0372 Date: 06/20/86

Title: (Letter accompanying lab samples from the lagoon)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Devine, Thomas W: US EPA
Attached: IND-001-0373

Document Number: IND-001-0693 To 0691 Date: 05/30/86

Title: Remedial Investigation/Feasibility Study

Type: PLAN
Author: Susan, James A: CC Johnson & Associates
Recipient: Wright, Russell L: US EPA

Document Number: IND-001-1219 To 1220 Date: 07/01/86

Title: (Letter stating CERCLA regulations and their effect on Remedial Action at Independent Nail)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Devine, Thomas W: US EPA
Attached: IND-001-1221

Document Number: IND-002-0377 To 0378 Date: 07/01/86

Title: (Letter regarding sample results and request to remove Independent Nail from the National Priorities List)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Devine, Thomas W: US EPA

Document Number: IND-001-1218 To 1218 Date: 08/01/86

Title: (Letter in response to letter of 06/20/86 and 07/01/86 detailing the position on CERCLA regulations)

Type: CORRESPONDENCE
Author: Tobin, Patrick M: US EPA
Recipient: Radford, Norman D: Vinson & Elkins

Document Number: IND-002-0379 To 0379 Date: 08/01/86

Title: (Formal request to have access to Independent Nail for the purpose of conducting the Remedial Investigation/Feasibility Study activities)

Type: CORRESPONDENCE
Author: Tobin, Patrick M: US EPA
Recipient: Radford, Norman D: Vinson & Elkins

Document Number: IND-001-1216 To 1217 Date: 08/12/86

Title: (Letter confirming phone conversation giving consent to the entry of representatives and contractors onto the property)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Tobin, Patrick M: US EPA

Document Number: IND-001-1377 To 1378 Date: 08/12/86

Title: (Letter regarding consent and contingencies)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Tobin, Patrick M: US EPA

Document Number: IND-002-0384 To 0385 Date: 08/12/86

Title: (Letter stating consent of entry to the property in question)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Tobin, Patrick M: US EPA

Document Number: IND-001-0291 To 0292 Parent: IND-001-0001 Date: 08/12/86

Title: (Letter giving consent for US EPA entry onto leased property where lagoon of concern is located)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Tobin, Patrick M: US EPA

Document Number: IND-001-1215 To 1215 Date: 06/14/86

Title: (Cover letter for the tentative Field Schedule for Independent Nail)

Type: CORRESPONDENCE
Author: Roth, Thomas M: US EPA
Recipient: Rakers, Gerald L: Independent Nail of SC

Document Number: IND-002-0386 To 0386 Date: 06/15/86

Title: (Certified Mail Receipts)

Type: CORRESPONDENCE
Author: none: none
Recipient: Bellamy, M E: none
Attached: IND-002-0387 IND-002-0388

Document Number: IND-001-1320 To 1321 Date: 06/18/86

Title: (Request for access to the property adjoining Independent Nail)

Type: CORRESPONDENCE
Author: Macfarlane, Kirk: US EPA
Recipient: none: none

Document Number: IND-002-0387 To 0387 Parent: IND-002-0386 Date: 08/18/86

Title: (Certified Mail Receipts)

Type: CORRESPONDENCE
Author: none: none
Recipient: Trask, James: none

Document Number: IND-002-0388 To 0389 Parent: IND-002-0386 Date: 08/18/86

Title: (Draft of a letter requesting access to property adjoining Independent Nail to conduct field investigations)

Type: CORRESPONDENCE
Author: Macfarlane, Kirk: US EPA
Recipient: Trask, James: none

Document Number: IND-001-1214 To 1214 Date: 08/20/86

Title: Field Activities at Independent Nail (partial listing of participants in the Remedial Investigation)

Type: CORRESPONDENCE
Author: Roth, Thomas M: US EPA
Recipient: Rakers, Gerald L: Independent Nail of SC

Document Number: IND-001-1317 To 1317 Parent: IND-001-1316 Date: 08/20/86

Title: (Domestic Return Receipt)

Type: CORRESPONDENCE
Author: illegible: none
Recipient: Bellamy, M E: none

Document Number: IND-001-1315 To 1316 Date: 08/21/86

Title: (Domestic Return Receipt)

Type: CORRESPONDENCE
Author: illegible: none
Recipient: Bellamy, Caroline: none
Attached: IND-001-1317

Document Number: IND-001-1318 To 1319 Date: 08/27/86

Title: (Letter regarding permission to conduct an investigation on Independent Nail)

Type: CORRESPONDENCE
Author: Howell, Ladson F: Howell Gibson and Boney
Recipient: Macfarlane, Kirk: US EPA

Document Number: IND-001-1064 To 1209 Date: 08/29/86 Confidential

Title: Project Operations Plan

Type: PLAN
Author: none: none
Recipient: none: US EPA

Document Number: IND-001-0519 To 1053 Date: 09/24/86

Title: Revised Project Operations Plan

Type: PLAN
Author: none: Camp Dresser & McKee
Recipient: none: US EPA

Document Number: IND-001-0371 To 0380 Date: 10/14/86

Title: Contaminant Transport Analyses Memorandum, Remedial Investigation/Feasibility Study

Type: PLAN
Author: Johnson, Richard C: Camp Dresser & McKee
Recipient: Roth, Thomas M: US EPA

Document Number: IND-001-0381 To 0452 Date: 12/05/86

Title: (Memo regarding characterization of Independent Nail)

Type: CORRESPONDENCE
Author: Susan, James A: CC Johnson & Associates
Recipient: Roth, Thomas M: US EPA

Document Number: IND-001-0353 To 0370 Date: 01/06/87

Title: Remedial Alternatvies/Technologies for Independent Nail

Type: PLAN
Author: Johnson, Richard C: Camp Dresser & McKee
Recipient: Roth, Thomas M: US EPA

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best available copy.

Document Number: IND-001-1213 To 1213 Date: 01/12/87

Title: (Cover letter for the Community Relations Plan)

Type: CORRESPONDENCE
Author: Roth, Thomas M: US EPA
Recipient: Rakers, Gerald L: Independent Nail of SC

Document Number: IND-001-1312 To 1312 Date: 01/20/87

Title: (Request to establish an Information Repository at the Beaufort County Library)

Type: CORRESPONDENCE
Author: Roth, Thomas M: US EPA
Recipient: Bishop, Emma: County of Beaufort SC

Document Number: IND-001-0513 To 0513 Parent: IND-001-0512 Date: 04/14/87

Title: (Letter accompanying submission of Technologies Screening Memorandum)

Type: CORRESPONDENCE
Author: Johnson, Richard C: Camp, Dresser & McKee
Recipient: Roth, Thomas M: US EPA

Document Number: IND-001-0514 To 0514 Parent: IND-001-0512 Date: 04/14/87

Title: (Letter transmitting Technologies Screening Memorandum)

Type: CORRESPONDENCE
Author: Susan, James A: CC Johnson & Associates
Recipient: Lee, Charles H: Camp Dresser & McKee

Document Number: IND-001-1212 To 1212 Date: 04/14/87

Title: (Cover letter for the Draft Remedial Investigation Report of Independent Nail)

Type: CORRESPONDENCE
Author: Roth, Thomas M: US EPA
Recipient: Rakers, Gerakd L: Independent Nail of SC

Document Number: IND-001-1311 To 1311 Date: 04/14/87

Title: (Letter accompanying the Draft Remedial Investigation Report for Independent Nail)

Type: CORRESPONDENCE
Author: Roth, Thomas M: US EPA
Recipient: Geitner, Harvey: US Dept of the Interior

Document Number: IND-001-1310 To 1310 Date: 04/15/87

Title: (Letter requesting a list of endangered and threatened species in the Asheville, NC area)

Type: CORRESPONDENCE
Author: Roth, Thomas M: US EPA
Recipient: Fridell, John: US Dept of the Interior

Document Number: IND-001-1308 To 1308 Date: 04/23/87

itle: (Letter concerning Remedial Investigation)

Type: CORRESPONDENCE
Author: Currie, Robert R: US Dept of the Interior
Recipient: Roth, Thomas M: US EPA
Attached: IND-001-130[illegible]

Document Number: IND-001-0289 To 0290 Parent: IND-001-0001 Date: 05/05/87

Title: (Letter submitting comments on 04/10/87 Draft First Operable Unit Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Roth, Thomas M: US EPA

Document Number: IND-001-0001 To 0283/B Date: 06/08/87 Confidential

Title: First Operable Unit Remedial Investigation Report

Type: PLAN
Author: Johnson, Richard C: Camp Dresser & McKee
Recipient: Roth, Thomas M: US EPA
Attached: IND-001-0284 IND-001-0285 IND-001-0287 IND-001-0289 IND-001-0291 IND-001-0293

Document Number: IND-001-0298 To 0352 Date: 06/08/87

Title: Quality Assurance Project Plan For Remedial Investigation/Feasibility Study

Type: PLAN
Author: Susan, James A: CC Johnson & Associates
Recipient: none: US EPA

Document Number: IND-001-0284 To 0284 Parent: IND-001-0001 Date: 06/10/87

Title: Facsimile Request and Cover Sheet

Type: OTHER
Author: Roth, Thomas: US EPA
Recipient: illegible: US EPA

Document Number: IND-001-0285 To 0286 Parent: IND-001-0001 Date: 06/10/87

Title: (Memo regarding authority to select site remedy with attached delegation briefing which susmmarizes results of Remedial Investigation)

Type: CORRESPONDENCE
Author: Ravan, Jack: US EPA
Recipient: Porter, J Winston: US EPA

Document Number: IND-001-0717 To 0753 Date: 06/12/87

Title: Quality Assurance Project Plan for Remedial Investigation/Feasibility Study

Type: PLAN
Author: McKenzie, William H: Camp Dresser & McKee
Recipient: none: US EPA

Document Number: IND-001-0293 To 0295 Parent: IND-001-0001 Date: 06/17/87

Title: (Letter providing initial comments on 06/03/87 draft Feasibility Study for first operable unit)

Type: CORRESPONDENCE
Author: Radford, Norman D: Vinson & Elkins
Recipient: Roth, Thomas M: US EPA

Document Number: IND-001-0296 To 0297 Date: 06/23/87

Title: (Letter accompanying a draft of sample studies with comments reflecting negative feelings about the report)

Type: CORRESPONDENCE
Author: Rakers, Gerald L: Independent Nail of SC
Recipient: Roth, Thomas M: US EPA

Document Number: IND-002-0002 To 0003 Date: 07/20/87

Title: Comments on Independent Nail Superfund Site Cleanup

Type: CORRESPONDENCE
Author: Glenn, Michelle: US EPA
Recipient: none: none

Document Number: IND-002-0001 To 0001 Date: 07/21/87

Title: Environmental News

Type: OTHER
Author: none: US EPA
Recipient: none: none

Document Number: IND-002-0016 To 0212 Date: 07/28/87

Title: Draft Focused Feasibility Study

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: IND-001-0512 To 0592 Date: 08/14/87

Title: Technologies Screening Memorandum

Type: PLAN
Author: Susan, James A: CC Johnson & Associates
Recipient: none: US EPA
Attached: IND-001-0513 IND-001-0514

Document Number: IND-002-0390 To 0390 Date: 09/28/87

Title: Declaration for the Record of Decision - Remedial Alternative Selection

Type: OTHER
Author: De Hihns, Lee A: US EPA
Recipient: none: none
Attached: IND-002-0391 IND-002-0428

Document Number: IND-002-0426 To 0427 Date: 09/30/87

Title: (Letter with comments from department upon review of Record of Decision stating concurrenc by State of SC)

Type: CORRESPONDENCE
Author: Shaw, P Lewis: SC Dept of Health & Environmental Control
Recipient: De Hihns, Lee A: US EPA

Document Number: IND-002-0429 To 0439 Parent: IND-002-0428 Date: 10/06/87

Title: (Memo containing the requested Health Assessment)

Type: CORRESPONDENCE
Author: Knouse, R William: US Dept of Health & Human Services
Recipient: Pietrosewicz, Casimer V: US EPA

Document Number: IND-002-0429 To 0429 Parent: IND-002-0390 Date: 10/20/87

Title: (Memo enclosing final copy of formal Health Assessment for soil Operable Unit to be included in Administrative Record)

Type: CORRESPONDENCE
Author: Pietrosewicz, Casimer V: US Dept of Health & Human Services
Recipient: Glenn, Michelle: US EPA
Attached: IND-002-0429

ATTACHMENT 3

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South Carolina Department of Health and Environmental Control

2600 Bull Street
Columbia, S.C. 29201

Commissioner
Michael D. Jarrett

Board
Harry M. Hallman, Jr., Chairman
Toney Graham, Jr. M.D., Vice-Chairman
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Oren L. Brady, Jr.
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Euta M. Colvin, M.D.
Henry S. Jordan, M.D.

January 12, 1989

Ms. Michelle Glenn
Remedial Project Manager
Superfund Branch
US EPA, Region IV
345 Courtland Street
Atlanta, GA 30365

RE: Independent Nail
Beaufort, SC

Dear Ms. Glenn:

After a review of the revised close-out report dated November 29, 1988, the State of South Carolina concurs with US EPA's recommendation to delete this site from the NPL. This concurrence from the State of South Carolina is contingent upon the installation of additional wells as recommended by SCDHEC. The additional wells must be installed and sampled in an effort to fully characterize the site's groundwater quality and to determine whether the no action alternative selected for operable unit two is correct. The State welcomes the opportunity to assist EPA in selecting the location for installing the additional wells and selecting the wells to be monitored during O&M.

If you have any questions concerning this matter, please feel free to contact me.

Sincerely,

Lynn C. Martin

Lynn C. Martin, Director
Site Engineering and Screening Section
Bureau of Solid and Hazardous Waste
Management

LCM/njw
Enclosure
cc: Hartsill Truesdale
Keith Lindler
Gil Trentanove
Jim Ferguson
George Nelson - District Director

EPA/SFB/NSMS
REGION IV
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JAN 18 1989
ATLANTA, GA.